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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,745	02/08/2002	Ryosuke Iida	041-2083	9312

7590

07/27/2005

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EXAMINER

LAVIN, CHRISTOPHER L

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/067,745	Applicant(s) IIDA ET AL.	
	Examiner Christopher L. Lavin	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the newly added subject matter in claims 1, 23, 50, 51, 53, 54, 57, and 58 dealing with projecting the locus or vertical line must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 - 63 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The newly added limitation in the independent claims (1, 23, 50, 51, 53, 54, 57, and 58) starting with the language "by projecting" makes no sense, further explanation or the removal of the language is required. Looking at the language in question, the first section seems to project a line (in the original viewpoint) onto the road surface. First the examiner must ask (in regards to claims with locus lines), does this mean that the locus line is no longer a certain height above the road surface? The second part seems to say that the projected lines in the first part, which have now somehow become part of the virtual viewpoint are again projected onto the plane corresponding to the road surface. At this point the examiner doesn't even have an idea of what is going on. To the best of the examiner's understanding of the specification it would appear that the applicant is claiming the step of including the generated lines into the newly created virtual viewpoint for the remainder of this office action the examiner will interpret the claimed feature as such. Examiner suggests that the applicant rewrites this feature to be more clearly understood. The examiner has also requested drawings (see above) to help facilitate understanding of the concept.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1 – 52, and 57 – 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (EP 1065642) in view of Okamoto et al ("Development of Parking Assistance System Using Virtual Viewpoint Image Synthesis", the 71 ITS International Conference , 2000).

In regards to claim 1, Shimizu discloses a picture synthesizing apparatus, i.e., Parking Assist ECU, comprising (Figure 1, item 6): image pickup means, i.e., camera, that is attached to a vehicle disposed on a road surface and that is adapted to obtain an original image of a surrounding object viewed from a viewpoint of the image pickup means (Figure 1, item 10); a viewpoint change image synthesizing means that is adapted to produce a synthesized image, in which the surrounding object is viewed from a virtual viewpoint different from the viewpoint of the image pickup means [along a direction substantially vertical to the road surface, from the original image obtained by said image pickup means and is adapted to draw the synthesized image on a plane corresponding and is adapted to draw the synthesized image on a plane corresponding to the road surface] (col. 71, lines 5 – 8; col. 72, lines 3 – 7; col. 71, lines 16 – 21); a vehicle locus line generation means that is adapted to generate at least one of a locus line of said vehicle placed at an arbitrary height from the road surface and a vertical line extending normal to the road surface (col. 71, lines 16 – 21; col. 71, lines 29 – 33); a vehicle locus line drawing means that is adapted to draw the locus or vertical line

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generated by said vehicle locus line generation means on the synthesized image produced by said viewpoint of the image synthesizing means [by projecting the locus or vertical line viewed from the viewpoint of the image pickup means onto the road surface and again projecting the projected locus or vertical line viewed from the virtual viewpoint onto the plane corresponding to the road surface] (col. 71, lines 16 – 21; col. 71, lines 29 – 33).

Shimizu discloses changing the viewpoint in several different fashions, as shown above, however Shimizu does not specify that after changing the viewpoint the image is further modified. However changing the viewpoint alone would not adequately provide for parking assistance. With a viewpoint change, where the image is often likely to include distortions, guidelines provide the user with a better sense of the space, size, and orientation (col. 38, lines 32 – 34). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to further modify the image created by Shimizu after a viewpoint change to include guidelines.

Shimizu as previously stated discloses changing the viewpoint in several different fashions, however Shimizu does not disclose the viewpoint change that is now called for in the newly added limitations. It is well known in the art to create synthesized aerial viewpoints as shown by Okamoto (Figure 1, Figure 4, and page 6).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to create a virtual viewpoint consisting of an aerial view (as taught by Okamoto) using the picture synthesizing apparatus disclosed by Shimizu. As Okamoto teaches (page 6) the aerial viewpoint is better than using conventional mirrors

when parking. As one of the purposes of Shimizu's patent is to facilitate parking. Using an aerial viewpoint will make Shimizu's apparatus more useful as it will provide a viewpoint more conducive to the objective of parking.

In regards to claim 23, the prior subject matter of claim 23 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 1. The argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 23.

In regards to claim 28, The picture synthesizing apparatus according to claim 1, further comprising: a storage means that is adapted to store predetermined data before hand (Figure 3, items 27, 28, and 29); and a drawing means that is adapted to superimpose predetermined auxiliary data upon the synthesized image produced by said viewpoint change image synthesizing means based on the data read from said storage means, [wherein said image pickup means obtains the original image in which a rear part of said vehicle is positioned in a view field, and wherein said viewpoint change image synthesizing means is adapted to produce the synthesized image including an image of said vehicle] (col. 72, lines 50 – 54; col. 71, lines 29 – 33; Figure 3, items 27, 28, 29).

Shimizu discloses changing the viewpoint in several different fashions, as shown above, however Shimizu does not specify that after changing the viewpoint the image is further modified. However changing the viewpoint alone would not adequately provide for parking assistance. With a viewpoint change, where the image is often likely to include distortions, guidelines provide the user with a better sense of the space, size,

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and orientation (col. 38, lines 32 – 34). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to further modify the image created by Shimizu after a viewpoint change to include guidelines.

Shimizu further does not disclose that the image pickup means is disposed to show the rear part of the car. Changing the angle of a camera disposed in the rear of a car is an obvious modification.

Okamoto teaches of a parking assistance system using a virtual viewpoint image synthesis. In figure 4.b Okamoto shows that the rear of the car is shown in the virtual viewpoint, in order to include the rear part of the car the camera angle would need to include the rear part of the car.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to reposition the camera to include the rear part of the car. By doing so the user can get a better idea of how far away from a collision point the car is.

In regards to claim 50, the prior subject matter of claim 50 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 1. The argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 50.

In regards to claim 51, the prior subject matter of claim 51 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 1. The argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 51.

In regards to claim 52, although claim 52 now depends from claim 51 claim 52 is still rejected for the same reasons as before although the second 103 which originally showed that the camera could image the rear of the car is no longer necessary as it this feature has been removed by the applicant.

In regards to claim 57, the prior subject matter of claim 57 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 1. The argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 57.

In regards to claim 58, the prior subject matter of claim 58 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 1. The argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 58.

In regards to claim 59, although claim 59 now depends from claim 57 claim 59 is still rejected for the same reasons as before.

In regards to claims 60 – 62, Figure 1 of Shimizu clearly shows that the vehicle is a car.

6. Claims 53 – 56, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as modified by Okamoto as applied to claims 50 – 52 above, and further in view of Thompson (2,736,885).

In regards to claim 53, the prior subject matter of claim 53 is rejected for the same reasons as previously shown in the last office action. The new material, which matches that added in claim 1, is rejected for the same reasons as claim 1. The

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argument analogous to that presented above for the new material in claim 1 is applicable to the new material in claim 57. However, there is one new feature that was not added into claim 1. This feature is the further detailing of the detection means. It is clear from the specification that in this claim the applicant is claiming a means of packing up a vehicle in order to connect with a trailer. Shimizu (as modified by Okamoto) does not teach this feature. However, as shown by Thompson (col. 1, lines 26 – 31; col. 2, lines 21 – 36) this concept is well known in the art.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to include a vehicle aligning indicator (as taught by Thompson) in the image acquirement warning apparatus disclosed by Shimizu (as modified by Okamoto). Shimizu already has been shown to be useful in parking situations where backing up is required. In many ways hitching a trailer to a car is very similar to a backup parking operation. By adding an indicator to alert the user when the car is in proper alignment the apparatus can quickly provide the user with the needed information for hitching a trailer. This addition would be simple, considering the similar fields of endeavor and add further value to the apparatus. Thus making the product more desirable.

In regards to claim 54, the prior subject matter of claim 54 is rejected for the same reasons as previously shown in the last office action. The new material is rejected for the same reasons as claim 53. The argument analogous to that presented above for the new material in claim 53 is applicable to the new material in claim 54.

In regards to claim 55, although claim 55 now depends from claim 53 claim 55 is still rejected for the same reasons as before although the second 103 which originally showed that the camera could image the rear of the car is no longer necessary as it this feature has been removed by the applicant.

In regards to claim 56, claim 56 is rejected for the same reasons as were provided in the previous office action.

In regards to claim 63, Figure 1 of Shimizu clearly shows that the vehicle is a car.

Allowable Subject Matter

7. Claims 31 – 33, 37, 38, 42, 43, and 45 – 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the 112 issues were corrected.

8. Please see reasons for allowable subject matter from the previous office action for more information.

Response to Arguments

9. Applicant's arguments filed 05/06/05 have been fully considered but they are not persuasive.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within


TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher L. Lavin whose telephone number is 571-272-7392. The examiner can normally be reached on M - F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mancuso Joseph can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Lavin


BRIAN WERNER
PRIMARY EXAMINER